Prepare a alcohol solution with a total volume of 700 mL and a concentration of 7.5 % (v/v).

Prepare 282 mL of a 9.4 % (v/v) alcohol solution.

Prepare 2.1 L of a 3.2 % (v/v) alcohol solution.

Prepare a 13.2 % (v/v) alcohol solution given 51 mL of alcohol.

Prepare a 0.32 % (v/v) alcohol solution given 2.2 mL of alcohol.

Prepare a 3.2 % (v/v) alcohol solution given 1.2 L of alcohol.

Prepare a alcohol solution with a total volume of 700 mL and a concentration of 7.5 % (v/v).

$$C = \frac{\forall_{alcohol}}{\forall_{total}}$$

$$7.5\%(v/v) = \frac{\forall}{700\,mL}$$

$$\frac{7.5\ mL}{100\ mL} = \frac{\forall}{700\,mL}$$

$$\forall = \frac{(7.5\ mL)(700\,mL)}{100\ mL}$$

$$\forall = 52.5\ mL$$

$$\boxed{\forall_{alcohol} = 50\ mL}$$

Prepare 282 mL of a 9.4 % (v/v) alcohol solution.

$$C = \frac{\forall_{alcohol}}{\forall_{total}}$$

$$9.4\%\ (v/v) = \frac{\forall}{282\ mL}$$

$$\frac{9.4\ mL}{100\ mL} = \frac{\forall}{282\ mL}$$

$$\forall = \frac{(9.4\ \cancel{mL})(282\ mL)}{100\ \cancel{mL}}$$

$$\forall = 26.5\ mL$$

$$\boxed{\forall_{alcohol} = 27\ mL}$$

Prepare 2.1 L of a 3.2 % (v/v) alcohol solution.

$$C = \frac{\forall_{alcohol}}{\forall_{total}}$$

$$3.2\%\,(v/v) = \frac{\forall}{2.1\ L}$$

$$\frac{3.2\ mL}{100\ mL} = \frac{\forall}{2.1\ L}$$

$$\forall = \frac{(3.2\ mL)(2.1\ L)}{100\ mL}$$

$$\forall = 0.0672\ L \left(\frac{1000\ mL}{1\ L}\right) = 67.2\ mL$$

$$\boxed{\forall_{alcohol} = 67\ mL}$$

Prepare a 13.2 % (v/v) alcohol solution given 51 mL of alcohol.

$$C = \frac{\forall_{alcohol}}{\forall_{total}}$$

$$13.2\%\,(v/v) = \frac{51\ mL}{\forall}$$

$$\frac{13.2\ mL}{100\ mL} = \frac{51\ mL}{\forall}$$

$$\forall = \frac{(100\ \cancel{mL})(51\ mL)}{13.2\ \cancel{mL}}$$

$$\forall = 386.\overline{36}\ mL$$

$$\boxed{\forall_{total} = 390\ mL}$$

Prepare a 0.32 % (v/v) alcohol solution given 2.2 mL of alcohol.

$$C = \frac{\forall_{alcohol}}{\forall_{total}}$$

$$0.32\%\,(v/v) = \frac{2.2\ mL}{\forall}$$

$$\frac{0.32\ mL}{100\ mL} = \frac{2.2\ mL}{\forall}$$

$$\forall = \frac{(100\ \cancel{mL})(2.2\ mL)}{0.32\ \cancel{mL}}$$

$$\forall = 687.5\ mL$$

$$\boxed{\forall_{total} = 690\ mL}$$

Prepare a 3.2 % (v/v) alcohol solution given 1.2 L of alcohol.

$$C = \frac{\forall_{alcohol}}{\forall_{total}}$$

$$3.2\%\,(v/v) = \frac{1.2\,L}{\forall}$$

$$\frac{3.2\ mL}{100\ mL} = \frac{1.2\,L}{\forall}$$

$$\forall = \frac{(100\ mL)(1.2\,L)}{3.2\ mL}$$

$$\forall = 37.5\,L$$

$$\boxed{\forall_{total} = 38\,L}$$